

# **UDOT TTQP/WAQTC**

## **Registration, Policies, and Information Handbook (RP&IH)**



Revised by WAQTC October 2015  
Revised by UDOT January 2016



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## **ABOUT THIS HANDBOOK**

The Registration, Policies, & Information Handbook (RP&IH) is intended to be a guidance document for the technician or laboratory for the Transportation Technician Qualification Program (TTQP) policies and procedures. It is, however, the responsibility of the technician to remain up to date on all matters pertaining to the program. If you have questions about either program, contact the appropriate Agency person listed in this Handbook.

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Requests for WAQTC permissions should be directed to:

Garth Newman WAQTC Recorder/Historian  
Idaho Transportation Department  
P.O. Box 7129  
Boise, Idaho 83707-1129

## LIST OF ABBREVIATIONS

AgTT	Aggregate Testing Technician
AgTT Plus	Aggregate Plus Testing Technician (UDOT)
AKDOT & PF	Alaska Department of Transportation & Public Facilities
AQC	Agency Qualification Committee
AsTT II	Asphalt Testing Technician II
CDOT	Colorado Department of Transportation
CFLHD	Central Federal Lands Highway Division
CsTT	Concrete Strength Testing Technician (UDOT)
CTT	Concrete Testing Technician
DTT	Density Testing Technician
EBTT	Embankment & Base Testing Technician
EBTT Plus	Embankment Plus Testing Technician (UDOT)
FHWA	Federal Highway Administration
HDOT	Hawaii Department of Transportation
ITD	Idaho Transportation Department
LbTT	Laboratory Testing Technician (UDOT)
LQP	Laboratory Qualification Program
MDT	Montana Department of Transportation
NMDOT	New Mexico Department of Transportation
ODOT	Oregon Department of Transportation
QAC	Qualification Advisory Committee
RP & IH	Registration, Policies & Information Handbook
SMD	SuperPave Mix Design Testing Technician (UDOT)
SRDTT	Sampling, Reduction and Density Testing Technician (UDOT)
SRTT	Sampling & Reduction Testing Technician (UDOT)
TTQP	Transportation Technician Qualification Program
UDOT	Utah Department of Transportation
UDOT TTQP	Utah Department of Transportation Trans Tech Qualification Program
WAQTC	Western Alliance for Quality Transportation Construction
WFLHD	Western Federal Lands Highway Division
WSDOT	Washington Department of Transportation





**UTAH DEPARTMENT OF TRANSPORTATION (UDOT)  
TRANSPORTATION TECHNICIAN QUALIFICATION PROGRAM  
(TTQP)  
AND  
WESTERN ALLIANCE FOR QUALITY TRANSPORTATION  
CONSTRUCTION (WAQTC)**

**INTRODUCTION**

The Western Alliance for Quality Transportation Construction (WAQTC), is comprised of the States of Alaska, Colorado, Hawaii, Idaho, Montana, New Mexico, Oregon, Utah, and Washington, and the Western & Central Federal Lands Highway Division (WFLHD & CFLHD) of the Federal Highway Administration. This organization is dedicated to improving the quality of the transportation products and services.

**MISSION STATEMENT**

Provide leadership in the pursuit of continuously improving quality in transportation construction.

Through our partnership, we will:

- promote an atmosphere of trust, cooperation, and communication between government agencies and the private sector
- respond in a unified and consistent manner to identified quality improvement needs and new technologies that impact the products that we provide
- provide a forum to promote uniform test standards
- provide highly skilled, knowledgeable materials sampling and testing technicians
- provide reciprocity for Qualified testing technicians between accredited Agencies

**PURPOSE OF THE WAQTC**

The WAQTC is comprised of at least one representative of each of the member Agencies. WAQTC is focused in three main areas. Standardizing test methods (WAQTC, AASHTO, & ASTM), accreditation of the Transportation Technician Qualification Program (TTQP), and working together on national programs of significance including research, training, technology deployment.

**BENEFITS OF MEMBERSHIP**

- Cost savings
- Partnering
- Savings to contractors and consultants working in more than one State
- Sharing resources human, tech, financial

- Reducing wasteful duplication

## **ORGANIZATIONAL STRUCTURE**

### **Executive Committee**

- Contributing Member
- Accredited Contributing Members
- Advisory member
- Guest

### **Transportation Qualification Program (TTQP) Committees**

- Qualification Advisory Committee (QAC)
- Agency Qualification Committee (AQC)

## **EXECUTIVE COMMITTEE**

The Executive Committee is comprised of at least one representative of each of the member Agencies of the WAQTC. This committee is responsible for the mission, objectives, structure, policy decisions, the direction of the WAQTC, and other programs as may be undertaken in the future. Operational guidance for this committee can be found in the WAQTC Bylaws, Appendix A.

## **ACCREDITED CONTRIBUTING MEMBERS**

Agencies that have agreed to follow the standards of the TTQP accreditation program will have the status of Accredited Contributing Membership on the Executive Committee. These member agency representatives shall have a single vote on all operational matters of the TTQP. Further guidelines can be found in the TTQP operational agreement, Appendix B.

## **TTQP QUALIFICATION ADVISORY COMMITTEE**

The Qualification Advisory Committee (QAC) is the committee that has the principal task of overseeing technical portions of the TTQP. The QAC acts in an advisory capacity to the Executive Committee and reports directly to them. The QAC reviews the program and suggests changes or updates and ensures that the program continues to meet the highest standards. Additional information is contained in the TTQP Operating Agreement, Appendix B. This can be found on the WAQTC.org web site.

## **UDOT QUALIFICATION COMMITTEE**

The UDOT Qualification Committee (UQC) is responsible for oversight of the UDOT TTQP program, to ensure a region wide consistency in the implementation. The Chairman of the committee is a UDOT employee. The Committee will be responsible for hearing and acting on allegations of technician and laboratory misconduct. The committee may act upon other matters required for the efficient operation of the program such as IA variance requests due to some hardship of the technician. The Committee may provide comments and suggestions

to the QAC; may review, compile, and provide comments obtained from the course evaluations to the QAC.

Committee members will have a working knowledge of test procedures and are knowledgeable in the administrative procedures of the TTQP program. The committee will include members as shown below:

The Private Consultant Lab Manager, Region Materials Engineer, and Region Independent Assurance Inspector will generally serve on the committee for one year. The Private Consultant Lab Manager will be nominated and approved by the committee.

UDOT – Chairman (Quality Assurance Engineer)	UDOT – Utah Engineer for Materials or designee	Private Lab Manager
UDOT – Region Materials Engineer	UDOT – Region Independent Assurance Inspector	

## REPRESENTATIVES AND CONTACT POINTS

### WAQTC Executive Committee

Michael San Angelo - AKDOT&PF	Matt Strizich - MDT
Michael Voth - CFLHD	James M. Gallegos - NMDOT
Bill Schiebel - CDOT	Greg Stellmach - ODOT
Gerobin Carnate - HDOT	Scott Andrus- UDOT
Mike Santi - ITD	David M. Jones - WSDOT
Garth Newman - ITD	Howe Crockett - WFLHD

### TTQP Agency Contacts

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<b>Idaho</b>	Garth Newman garth.newman@idt.idaho.gov	<b>Washington</b>	Linda Hughes hughel@wsdot.wa.gov

Current course or qualification information, Qualified Technician and Testing Laboratory Registries, updates, useful information can be accessed at: [www.waqtc.org](http://www.waqtc.org) or by contacting the respective Agencies at the listed numbers.

Visit <http://www.udot.utah.gov/go/materials> for more information pertaining to TTQP qualification exam dates and UDOT qualified technicians.

## **TRANSPORTATION TECHNICIAN QUALIFICATION PROGRAM (TTQP)**

### **PURPOSE OF THE TTQP**

The Transportation Technician Qualification Program (TTQP) portion of the Administrative Manual contains uniform program policies and guidance for Agencies of the Western Alliance for Quality Transportation Construction (WAQTC). Agencies are expected to adhere to the content of this manual in order to maintain accreditation while creating uniformity and program integrity. Agencies are not authorized to make changes to content, unless specifically stated in this manual.

The purpose of this Qualification program is to provide improved quality in the transportation products that we provide. One means of accomplishing this is by ensuring that individuals have demonstrated abilities to engage in quality assurance activities (quality control, acceptance, & independent assurance) in transportation construction work under the jurisdiction of WAQTC contracting Agencies and those laboratories that perform Agency work meet an acceptable level of performance. Unless otherwise specified in the contract documents all WAQTC members that are contracting Agencies will require that technicians who perform Agency contract work will have successfully completed the Transportation Technician Qualification Program, and laboratories that perform sampling and testing on Agency projects will have been Qualified by a Laboratory Qualification Program in their respective States.

This program is prescribed to meet, in part, the requirements of The Code of Federal Regulations 637, Subpart B - Quality Assurance Procedures for Construction.

### **TTQP OBJECTIVES**

- To provide highly skilled, knowledgeable materials sampling and testing technicians
- To promote uniformity and consistency in testing
- To provide reciprocity for Qualified testing technicians between participating Agencies
- To create a harmonious working atmosphere between public and private employees based upon trust, open communication, and equality of Qualification

### **DEFINITION OF QUALIFICATION (QUALIFIED)**

Within the context of this guide and program the term *Qualification* is defined as the end product for someone who has successfully met the requirements, as defined elsewhere in this guide, in one of the technical areas in which WAQTC offers such credentials.

These are solely credentials as defined by WAQTC and establishes that the recipient has demonstrated a required level of knowledge and is eligible to perform work on certain transportation projects under the jurisdiction of the member contracting Agencies or others that utilize this program. This definition does not in any way suggest an affiliation with any

national or other organization that provides for similar credentials, or accredits organizations to provide for similar credentials, in any like areas to those that are included in the WAQTC program.

- Qualification – Regions / Contractors / Consultants
- Certification – UDOT Central Materials

### **WHO MUST BE QUALIFIED?**

All persons responsible for sampling of materials and performing and reporting on tests, in any of the technical areas in which Qualifications are offered, as defined elsewhere, on any project under the jurisdiction of one of the WAQTC contracting Agencies must be Qualified, unless otherwise designated in the contract documents for that project. Qualification may be granted only after successfully completing the requirements of this program. “Grandfathering” or “exceptions” to the TTQP, other than as noted in the Concrete Qualification, will not be granted.

### **QUALIFICATION RECIPROCITY**

Technicians must successfully complete all requirements of a Qualification area to be considered Qualified by the TTQP in that area. A person completing these requirements, and holding a valid Qualification, will then be considered Qualified to perform those specific sampling and testing functions, only, falling under that Qualification in any participating Agency of the WAQTC. Although the technician is considered Qualified in that area by all Agencies for the defined test methods, there may be additional Agency specific tests and contract administration or quality assurance procedures, not specifically covered in the TTQP Qualification, that the technician will be required by that Agency to show proficiency in. The technician should be aware that, non-WAQTC Agencies may or may not accept any of these Qualifications. Each individual should verify specific Agency requirements prior to seeking employment.

If an Agency does not require a technician to successfully complete the examination requirements for all test methods contained under a Qualification module, as defined in this manual, that person will not be considered Qualified under the TTQP in that module. A technician must successfully complete the additional exam requirements prior to obtaining WAQTC-wide Qualification. Any Qualification obtained in this manner will expire, on the last day of the month in which the initial exam portion was successfully completed, a maximum of five (5) years after that initial exam.

### **DISCLAIMERS**

Qualification of an individual by the TTQP indicates only that the individual has demonstrated a certain level of competence on a written and/or performance examination in a selected field of activity. Members of the WAQTC that are also contracting Agencies may require this Qualification of individuals performing activities specified in work contracts or

other activities. Each individual or organization utilizing Qualified individuals must make its own independent judgment of the overall competence of Qualified individuals. The WAQTC specifically disclaims any responsibility for the actions, or the failure to act, of individuals who have been Qualified through the TTQP.

## **CANDIDATES WITH DISABILITIES**

Persons with disabilities and those who have special needs should notify the TTQP representative at the time of registration so that reasonable accommodations can be made.

## **WAQTC SAMPLING AND TESTING QUALIFICATIONS**

Aggregate Testing Technician (AgTT)  
Asphalt Testing Technician (AsTT) II  
Concrete Testing Technician (CTT)  
Embankment and Base Testing Technician (EbTT)  
In-Place Density Testing Technician (DTT)

## **UDOT TTQP SAMPLING AND TESTING QUALIFICATIONS**

UDOT Superpave Mix Design and Analysis (SMD)  
UDOT Laboratory Testing Technician (LbTT)  
UDOT Concrete Strength Testing Technician (CsTT)  
UDOT Aggregate Plus Testing Technician (AgTT Plus)  
UDOT Sampling, Reduction and Density Testing Technician (SRDTT)  
UDOT Sampling, Reduction Testing Technician (SRTT)  
UDOT Profilograph (PO)  
UDOT Reciprocity ACI  
UDOT Reciprocity WAQTC

## **QUALIFICATION PROCESS**

- Obtain a current WAQTC / UDOT TTQP Manual.
- 3 days of training (MINIMUM) in the desired area for Qualification.
- Fulfill all prerequisites. (See individual Qualification Process for details)
- Obtain a signed Technician Training and Evaluation Form.

*Note: Technician Training And Evaluation Form is not required for Renewals.*

## **CERTIFICATION PROCESS**

### **Method I**



- Complete On-line registration
- **Applicable fee to be paid in** accordance with UDOT's Policy and Procedures.
- **Provide all applicable documentation (Day 1 of certification)**
- Attend the appropriate Qualification course in its entirety.
- Successfully pass the written and performance examinations.

#### **Method II**

- Complete On-line registration
- **Applicable fee to be paid in** accordance with UDOT's Policy and Procedures.
- **Provide all applicable documentation (Day 1 of certification)**
- Successfully pass the written and performance examinations.

## **WAQTC / UDOT TTQP AGGREGATE Plus (AgTT Plus) QUALIFICATION PROCESS FOR MATERIALS TESTING TECHNICIANS**

Aggregate Qualification is designed for those individuals responsible for field sampling and testing of aggregate for bases, bituminous mixes, or Portland cement concrete. Participants include contractor and supplier quality control personnel, consulting engineering and materials testing firm personnel, quality assurance technicians, and public agency personnel.

Course Length: approximately 2 days.

Course Size: 12 recommended

The Process for Qualifying in Aggregate Plus:

- Meet the prerequisites. (see below)
- Pass the written and performance examinations

Prerequisites for being Qualified in Aggregate Plus:

- 3 Days of training (MINIMUM)
- Have Technician Training and Evaluation Form signed by appropriate person for each FOP\*

*\* There may be special circumstances for technicians who are currently unemployed. The technician will obtain approval by the TTQP qualification specialist, explaining how they will accomplish the minimum training requirement.*

Recommendation:

- The participant should exhibit basic mathematics and reading comprehension skills.
- Basic laboratory experience in each FOP.

## TEST METHODS FOR AGGREGATE Plus (AgTT Plus) QUALIFICATION

<b>AASHTO/ WAQTC</b>	<b>PROCEDURE</b>	<b>TRAINING Classroom (C) Laboratory (L)</b>	<b>EXAM Written (W) Performance (P)</b>
T 2	Sampling of Aggregates	C	W, P*
T 248	Reducing Samples of Aggregate to Testing Size	C	W, P
T 27	Sieve Analysis of Fine and Coarse Aggregate	C	W, P
T 11	Materials Finer Than 75 µm (No. 200) Sieve in Mineral Aggregates by Washing	C	W, P
T 255	Total Evaporable Moisture Content of Aggregate by Drying	C	W, P
T 176	Plastic Fines in Graded Aggregates and Soils By Use of the Sand Equivalent Test	C	W, P
T 335	Determining the Percentage of Fracture in Coarse Aggregate	C	W, P
<b>UDOT TTQP Aggregate Plus (add-ons)</b>			
T19	Bulk Density (Unit Weight) and Voids in Aggregate FOP for AASHTO T19	C	W,P
T85	Specific Gravity and Absorption of Coarse Aggregate FOP for AASHTO T85	C	W,P

\*The Examinee may either be asked to physically sample materials or only to explain the sampling process during this portion of the performance examination.

## **WAQTC ASPHALT II (AsTT II) QUALIFICATION PROCESS FOR MATERIALS TESTING TECHNICIANS**

Asphalt Qualification is designed for those individuals responsible for field sampling and testing of Asphalt. Participants include contractor and supplier quality control personnel, consulting engineering and materials testing firm personnel, quality assurance technicians, and public agency personnel.

Course Length: approximately 2 days.

Course Size: 12 recommended

The Process for Qualifying in Asphalt II:

- Meet the prerequisites. (see below)
- Pass the written and performance examinations.

Prerequisites for being Qualified in Asphalt II:

- 3 Days of training (MINIMUM)
- Have Technician Training and Evaluation Form signed by appropriate person for each FOP\*

*\* There may be special circumstances for technicians who are currently unemployed. The technician will obtain approval by the TTQP qualification specialist, explaining how they will accomplish the minimum training requirement.*

Recommendation:

- The participant should exhibit basic mathematics and reading comprehension skills.
- Basic laboratory experience in each FOP.
- Strongly recommended to have either WAQTC AgTT or UDOT AgTT Plus

## TEST METHODS FOR ASPHALT II QUALIFICATION

<b>AASHTO/ WAQTC</b>	<b>PROCEDURE</b>	<b>TRAINING Classroom (C) Laboratory (L)</b>	<b>EXAM Written (W) Performance (P)</b>
T 168	Sampling Bituminous Paving Mixtures	C	W, P*
R 47	Reducing Samples of Hot Mix Asphalt to Testing Size	C	W, P
R 66	Sampling Bituminous Materials (methods 8 through 14)	C	W, P*
T 308	Determining the Asphalt Binder Content of Hot Mix Asphalt (HMA) by the Ignition Method	C	W, P
T 30	Mechanical Analysis of Extracted Aggregate	C	W, P
T 209	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures	C	W, P
T 166	Bulk Specific Gravity of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens	C	W, P
T 329	Moisture Content of Hot Mix Asphalt (HMA) By Oven Method	C	W, P
T 312	Preparing and Determining the Density of HMA Specimens by means of the Gyratory Compactor	C	W, P
TM 13	Volumetric Properties of Hot Mix Asphalt (HMA)	C	W,P

- \* The Examinee may either be asked to physically sample materials or may only be asked to explain the sampling process during this portion of the performance examination.

## **WAQTC CONCRETE (CTT) QUALIFICATION PROCESS FOR MATERIALS TESTING TECHNICIANS**

Concrete Qualification is designed for those individuals responsible for field sampling and testing of Portland cement concrete. Participants include contractor and supplier quality control personnel, consulting engineering and materials testing firm personnel, quality assurance technicians, and public agency personnel.

Course Length: approximately 2 days.

Course Size: 18 recommended

The Process for Qualifying in Concrete:

- Meet the prerequisites. (see below)
- Pass the written and performance examinations

**OR**

### **ACI RECIPROCITY PROCESS**

- Hold a valid American Concrete (ACI) Certification in Concrete Field Testing Technician Grade 1
- Submit a copy of valid ACI Certification and Completed and Signed TTQP Rights and Responsibilities Agreement to obtain UDOT TTQP Certification. **\*\***(see ACI Reciprocity Notification)

Prerequisites for being Qualified in Concrete:

- 3 Days of training (MINIMUM)
- Have Technician Training and Evaluation Form signed by appropriate person for each FOP\*

*\* There may be special circumstances for technicians who are currently unemployed. The technician will obtain approval by the TTQP qualification specialist, explaining how they will accomplish the minimum training requirement.*

Recommendation:

- The participant should exhibit basic mathematics and reading comprehension skills.

### **\*\*ACI Reciprocity Notification**

ACI (American Concrete Institute) Certification - Concrete Field Testing Technician Grade 1

For individuals requesting to receive a WAQTC qualification in Concrete (ACI-CFT) through the ACI reciprocity clause it is recommended that a review of the testing standards listed on the following page occurs. The ACI certification process requires performing

ASTM standard test methods. ASTM standards may or may not be the same as the AASHTO and WAQTC standard test methods required by this qualification.

By signing the WAQTC / UDOT TTQP Rights and Responsibilities Agreement form an individual pledges to follow the applicable AASHTO and WAQTC test methods when sampling or testing on jobsites requiring WAQTC qualifications.

### TEST METHODS FOR CONCRETE (CTT) QUALIFICATION

<b>AASHTO/ WAQTC</b>	<b>PROCEDURE</b>	<b>TRAINING Classroom (C) Laboratory (L)</b>	<b>EXAM Written (W) Performance (P)</b>
WAQTC TM 2	Sampling Freshly Mixed Concrete	C	W, P*
T 309	Temperature of Freshly Mixed Portland Cement Concrete	C	W, P
T 119	Slump of Hydraulic Cement Concrete	C	W, P
T 152	Air Content of Freshly Mixed Concrete by the Pressure Method	C	W, P
T 121	Mass per Cubic Meter (Cubic Foot), Yield, and Air Content (Gravimetric) of Concrete	C	W, P
T 23	Making and Curing Concrete Test Specimens in the Field	C	W, P

\*The Examinee may either be asked to physically sample materials or may only be asked to explain the sampling process during this portion of the performance examination.

## **WAQTC / UDOT TTQP EMBANKMENT PLUS (EbTT Plus) QUALIFICATION PROCESS FOR MATERIALS TESTING TECHNICIANS**

Embankment and Base Qualification is designed for those individuals responsible for field sampling and testing of soils and soil aggregate mixtures. Participants include contractor and supplier quality control personnel, consulting engineering and materials testing firm personnel, quality assurance technicians, and public agency personnel.

Course Length: approximately 2 days.

Course Size: 12 recommended

The Process for Qualifying in Embankment and Base:

- Meet the prerequisites. (see below)
- Pass the written and performance examinations.

Prerequisites for being Qualified in Embankment and Base:

- 3 Days of training (MINIMUM)
- Have Technician Training and Evaluation Form signed by appropriate person for each FOP\*

*\* There may be special circumstances for technicians who are currently unemployed. The technician will obtain approval by the TTQP qualification specialist, explaining how they will accomplish the minimum training requirement.*

Recommendation:

- The participant should exhibit basic mathematics and reading comprehension skills.
- Basic laboratory experience in each FOP.



## TEST METHODS FOR EMBANKMENT PLUS (EbTT Plus) QUALIFICATION

AASHTO/ WAQTC	PROCEDURE	TRAINING Classroom (C) Laboratory (L)	EXAM Written (W) Performance (P)
T 99	Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12in.) Drop	C	W, P*
T 180	Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18in.) Drop	C	W, P*
T 272	Family of Curves-One Point Method	C	W, P
Annex T99 / T180	Correction for Coarse Particles in the Soil Compaction Test	C	W
T 255/265	Total Moisture Evaporable Content of Aggregate by Drying / Laboratory Determination of Moisture Content of Soils	C	W, P
T 85	Specific Gravity and Absorption of Coarse Aggregate	C	W, P
<b>UDOT TTQP Embankment (add-ons)</b>			
T 89	Determining the Liquid Limit of Soils	C	W, P
T 90	Determining the Plastic Limit and Plasticity Index of Soils	C	W, P

- \* Participating WAQTC members will require a written and performance examination on one of these two methods, which may require that a technician seeking employment in another Agency may have to show proficiency in a different method also.

## **WAQTC IN-PLACE DENSITY (DTT) QUALIFICATION PROCESS FOR MATERIALS TESTING TECHNICIANS**

In-Place Density Qualification is designed for those individuals responsible for field testing for In-Place Density of soils, soil aggregate mixtures, aggregate products, and bituminous mixes. Participants include contractor and supplier quality control personnel, consulting engineering and materials testing firm personnel, quality assurance technicians, and public agency personnel.

Course Length: approximately 2 days.

Course Size: 12 recommended

The Process for Qualifying in Embankment and Base:

- Meet the prerequisites. (see below)
- Pass the written and performance examinations.

Prerequisites for being Qualified in Embankment and Base:

- Must hold an UDOT approved and current Radiation Safety & Hazmat Training Certifications.
- 3 Days of training (MINIMUM)
- Have Technician Training and Evaluation Form signed by appropriate person for each FOP\*

*\* There may be special circumstances for technicians who are currently unemployed. The technician will obtain approval by the TTQP qualification specialist, explaining how they will accomplish the minimum training requirement.*

Recommendation:

- The participant should exhibit basic mathematics and reading comprehension skills.

## TEST METHODS FOR IN-PLACE DENSITY (DTT) QUALIFICATION

AASHTO/ WAQTC	PROCEDURE	TRAINING Classroom (C) Laboratory (L)	EXAM Written (W) Performance (P)
T 99	Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12in.) Drop	C	W, P*
T 180	Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18in.) Drop	C	W, P*
T 272	Family of Curves-One Point Method	C	W, P
Annex T99 / T180	Correction for Coarse Particles in the Soil Compaction Test	C	W
T 255/265	Total Moisture Evaporable Content of Aggregate by Drying / Laboratory Determination of Moisture Content of Soils	C	W, P
T 85	Specific Gravity and Absorption of Coarse Aggregate	C	W, P
T 209	Maximum Specific Gravity of Hot Mix Asphalt (HMA) Paving Mixtures	C	W, P
T 166	Bulk Specific Gravity of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface-Dry	C	W, P
T 310	In-Place Density and Moisture Content of Soil and Soils-Aggregate by Nuclear Methods (Shallow Depth)	C	W, P
T 355	In-Place Density of Asphalt Mixtures Using the Nuclear Moisture-Density Gauge	C	W, P

\* Participating WAQTC members will require a written and performance examination on one of these two methods, which may require that a technician seeking employment in another Agency may have to show proficiency in a different method also.

## UDOT TTQP SUPERPAVE MIX DESIGN (SMD) AND STONE MATRIX ASPHALT MIX DESIGN (SMA) AND ANALYSIS QUALIFICATION PROCESS FOR MATERIALS TESTING TECHNICIANS

Superpave Mix Design and Analysis Qualification is designed for those individuals responsible for testing and determining acceptability of Superpave Mix Designs. Participants include contractor and supplier quality control personnel, consulting engineering and materials testing firm personnel, quality assurance technicians, and public agency personnel.

Course Length: approximately 3 days.

Course Size: 8 recommended

The Process for Qualifying in Superpave Mix Design and Analysis:

- Meet the prerequisites. (see below)
- Pass the written and performance examinations.

Prerequisites for Qualification in Superpave Mix Design and Analysis:

- Current qualification in: Asphalt II, Aggregate Plus
- Have Technician Training and Evaluation Form signed by appropriate person for each FOP\*

*\* There may be special circumstances for technicians who are currently unemployed. The technician will obtain approval by the TTQP qualification specialist, explaining how they will accomplish the minimum training requirement.*

Recommendation:

- **This is not a class for inexperienced technicians.**
- The participant should exhibit basic mathematics and reading comprehension skills.
- Candidates should be familiar with basic asphalt laboratory procedures including processing aggregates, compacting and measuring volumetric properties of asphalt mixtures, and testing asphalt mixes for moisture damage.
- Prior asphalt laboratory experience is strongly recommended.

## TEST METHODS FOR SUPERPAVE MIX DESIGN (SMD) AND ANALYSIS QUALIFICATION

<b>AASHTO/ ASTM/UDOT</b>	<b>PROCEDURE</b>	<b>TRAINING Classroom (C) Laboratory (L)</b>	<b>EXAM Written (W) Performance (P)</b>
M 323	Standard Specification for SuperPave Volumetric Mix Design	C	W, P
R 35	Standard Practice for SuperPave Volumetric Mix Design	C	W, P
R 30	Guidelines for Laboratory Mixing of Hot-Mix Asphalt (HMA) and Mixture Conditioning of HMA	C	W
T 312	Preparing and Determining the Density of HMA Specimens by Means of the Gyratory Compactor	C	
T 324	Hamburg Wheel-Track Testing of Compacted Hot-Mix Asphalt	C	W
M 325	Standard Specification for Stone Matrix Asphalt (SMA)	C	W, P
R 46	Standard Practice for Designing Stone Matrix Asphalt (SMA)	C	W, P
T 305	Standard Method of Test for Determination of Draindown Characteristics in Uncompacted Asphalt Mixtures	C	W
<b>UDOT MOI and Guidelines</b>			
UDOT MOI 8-933	Method for Determining Aggregate Flakiness Index	C	
UDOT MOI 8-988	Guidelines for Laboratory Mixing of Hot-Mix Asphalt (HMA) and Mixture Conditioning of HMA	C	
UDOT MOI 8-990	Method of Test for Hamburg Wheel-Track Testing of Compacted Hot-Mix Asphalt	C	
UDOT MOI 8-960	Guidelines for SuperPave Volumetric Mix Design and Verification	C	
UDOT MOI 8-961	Guideline for SuperPave Gyratory Compactor Protocol	C	

## UDOT TTQP LABORATORY TESTING TECHNICIAN (LbTT) QUALIFICATION PROCESS FOR MATERIALS TESTING TECHNICIANS

Laboratory Testing Technician Qualification is designed for those individuals responsible for testing aggregate and concrete specimens, determining quality and acceptability. Participants include contractor and supplier quality control personnel, consulting engineering and materials testing firm personnel, quality assurance technicians, and public agency personnel.

Course Length: approximately 2 days.

Course Size: 10 recommended

The Process for Qualifying in Laboratory Test Technician:

- Meet the prerequisites. (see below)
- Pass the written and performance examinations.

Prerequisites for being Qualified in Laboratory Test Technician:

- Current qualification in: Aggregate Plus, Embankment Plus
- Have Technician Training and Evaluation Form signed by appropriate person for each FOP\*

*\* There may be special circumstances for technicians who are currently unemployed. The technician will obtain approval by the TTQP qualification specialist, explaining how they will accomplish the minimum training requirement.*

Recommendation:

- **This is not a class for inexperienced technicians.**
- The participant should exhibit basic mathematics and reading comprehension skills.
- Candidates should be familiar with basic Aggregate / Embankment laboratory procedures including processing aggregates, compacting soils and measuring consensus properties of materials.
- Prior laboratory experience is strongly recommended.

## TEST METHODS FOR LABORATORY (LbTT) TEST TECHNICIANS QUALIFICATION

<b>AASHTO/ ASTM</b>	<b>PROCEDURE</b>	<b>TRAINING Classroom (C) Laboratory (L)</b>	<b>EXAM Written (W) Performance (P)</b>
T 19	Bulk Density (“Unit Weight”) and voids in Aggregate	C	W, P
T 21	Organic Impurities in Fine Aggregate for Concrete	C	W, P
T 84	Specific Gravity and Absorption of Fine Aggregate	C	W, P
T 96/C 535	Resistance of Degradation of Small-size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine	C	W, P
T 104	Soundness of Aggregates by use of Sodium Sulfate or Magnesium Sulfate	C	W, P
T 112	Clay Lumps and Friable Particles	C	W, P
T 113	Lightweight Pieces in Aggregate	C	W
T 193	California Bearing Ratio	C	W, P
T 304	Uncompacted Void Content of Fine Aggregate	C	W, P

## **UDOT TTQP CONCRETE STRENGTH TEST TECHNICIAN (CsTT) QUALIFICATION PROCESS FOR MATERIALS TESTING TECHNICIANS**

Concrete Strength Testing Technician Qualification is designed for those individuals responsible for testing strength of concrete specimens, determining quality and acceptability. Participants include contractor and supplier quality control personnel, consulting engineering and materials testing firm personnel, quality assurance technicians, and public agency personnel.

Course Length: approximately 2 days.

Course Size: 10 recommended

The Process for Qualifying in Concrete Strength Test Technician:

- Meet the prerequisites. (see below)
- Pass the written and performance examinations

**OR**

### **ACI RECIPROCITY PROCESS**

- Hold a valid ACI Certification in Concrete Strength Testing Technician
- Submit a copy of valid ACI Certification and Signed TTQP Rights and Responsibilities Agreement to obtain TTQP Certification. **\*\***(see ACI Reciprocity Notification)

Prerequisites for Qualification in Concrete Strength Test Technician:

- 3 Days of training (MINIMUM)
- Have Technician Training and Evaluation Form signed by appropriate person for each FOP\*

*\* There may be special circumstances for technicians who are currently unemployed. The technician will obtain approval by the TTQP qualification specialist, explaining how they will accomplish the minimum training requirement.*

Recommendation

- The participant should exhibit basic mathematics and reading comprehension skills.
- Strongly recommended to have either Concrete (CTT) or American Concrete Institute (ACI) Concrete Field Testing Technician Grade 1.

### **\*\*ACI Reciprocity Notification**



## **ACI (American Concrete Institute) Certification - Concrete Strength Testing Technician**

For individuals requesting to receive a WAQTC qualification in Concrete (ACI-CsTT) through the ACI reciprocity clause it is recommended that a review of the testing standards listed on the following page occurs. The ACI certification process requires performing ASTM standard test methods. ASTM standards may or may not be the same as the AASHTO and WAQTC standard test methods required by this qualification.

By signing the WAQTC/UDOT TTQP Rights and Responsibilities Agreement form an individual pledges to follow the applicable AASHTO and WAQTC test methods when sampling or testing on jobsites requiring WAQTC qualifications.

### **TEST METHODS FOR CONCRETE STRENGTH TEST TECHNICIANS (CsTT) QUALIFICATION**

<b>AASHTO/ ASTM</b>	<b>PROCEDURE</b>	<b>TRAINING Classroom (C) Laboratory (L)</b>	<b>EXAM Written (W) Performance (P)</b>
	Mandatory Background Information	C	W
T 23	Making and Curing Concrete Test Specimens in the Field	C	
T 22	Compressive Strength of Cylindrical Concrete Specimens	C	W, P
T 97	Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)	C	W, P
T 231	Capping Cylindrical Concrete Specimens	C	W
C 1231	Use of Unbonded Caps in Determination of Compressive Strength of Hardened Concrete Cylinders	C	W

## **UDOT TTQP SAMPLING, REDUCTION AND DENSITY (SRD TT) QUALIFICATION PROCESS FOR MATERIALS TESTING TECHNICIANS**

Sampling, Reduction and Density Qualification is designed for those individuals responsible for performing In-Place Density Test on soils, soil-aggregate mixtures, aggregate products and bituminous mixes and obtaining proper samples of such for further testing. Participants include contractor and supplier quality control personnel, consulting engineering and materials testing firm personnel, quality assurance technicians, and public agency personnel. Sampling, Reduction and Density Qualification is not required for personnel having Aggregate, Asphalt and Embankment and Base/In-place Density Qualifications.

Course Length: approximately 2 days.  
Course Size: 18 recommended

The Process for Qualifying in Sampling, Reduction and Density:

- Meet the prerequisites. (see below)
- Pass the written and performance examinations.

Prerequisites for being Qualified in Sampling, Reduction and Density Test Technician:

- Must hold an UDOT approved and current Radiation Safety & Hazmat Training Certifications.
- Provide all applicable documentation Day 1 of certification.
- Have Technician Training and Evaluation Form signed by appropriate person for each FOP\*

*\* There may be special circumstances for technicians who are currently unemployed. The technician will obtain approval by the TTQP qualification specialist, explaining how they will accomplish the minimum training requirement.*

Recommendation:

- The participant should exhibit basic mathematics and reading comprehension skills.

Note:

Sampling Reduction and Density (SRD TT) Qualification & Sampling and Reduction (SRTT) Qualification are offered together, participant should register for the level of qualification desired.

**TEST METHODS FOR SAMPLING, REDUCTION AND DENSITY (SRD TT)  
QUALIFICATION**

<b>AASHTO/ WAQTC</b>	<b>PROCEDURE</b>	<b>TRAINING Classroom (C) Laboratory (L)</b>	<b>EXAM Written (W) Performance (P)</b>
<b>SAMPLING</b>			
T 2	Sampling of Aggregates	C	W, P*
T 168	Sampling Bituminous Paving Mixtures	C	W, P*
R 66	Sampling Bituminous Materials	C	W
UDOT MOI 8-984	Sampling Methods		
<b>REDUCTION</b>			
T 248	Reducing Samples of Aggregate to Testing Size	C	W, P
R 47	Reducing Samples of Hot Mix Asphalt to Testing Size	C	W, P
UDOT MOI 8-985	Sample Reduction Methods		
<b>DENSITY</b>			
T 310	In-Place Density of Embankment and Base Using the Nuclear Moisture-Density Gauge	C	W, P
T 355	In-Place Density of Bituminous Mixtures using the Nuclear Moisture-Content Gauge	C	W, P

\*The Examinee may either be asked to physically sample materials or may only be asked to explain the sampling process during this portion of the performance examination.

## **UDOT TTQP SAMPLING & REDUCTION (SRTT) QUALIFICATION PROCESS FOR MATERIALS TESTING TECHNICIANS**

Sampling & Reduction Qualification is designed for those individuals responsible for performing sampling and reduction on soils, soil-aggregate mixtures, aggregate products and bituminous mixes and obtaining proper samples of such for further testing. Participants include contractor and supplier quality control personnel, consulting engineering and materials testing firm personnel, quality assurance technicians, and public agency personnel. Sampling & Reduction Qualification is not required for personnel having Aggregate, Asphalt II and Embankment Plus Qualifications.

Course Length: approximately 2 days.  
Course Size: 18 recommended

The Process for Qualifying in Sampling & Reduction:

- Meet the prerequisites. (see below)
- Pass the written and performance examinations.

Prerequisites for being Qualified in Sampling & Reduction:

- Have Technician Training and Evaluation Form signed by appropriate person for each FOP\*
- Provide all applicable documentation Day 1 of certification.

*\* There may be special circumstances for technicians who are currently unemployed. The technician will obtain approval by the TTQP qualification specialist, explaining how they will accomplish the minimum training requirement.*

Recommendation:

- The participant should exhibit basic mathematics and reading comprehension skills.

Note:

Sampling Reduction and Density (SRD TT) Qualification & Sampling and Reduction (SRTT) Qualification are offered together, participant should register for the level of qualification desired.

## TEST METHODS FOR SAMPLING & REDUCTION (SRTT) QUALIFICATION

AASHTO/ WAQTC	PROCEDURE	TRAINING Classroom (C) Laboratory (L)	EXAM Written (W) Performance (P)
<b>SAMPLING</b>			
T 2	Sampling of Aggregates	C	W, P*
T 168	Sampling Bituminous Paving Mixtures	C	W, P*
R 66	Sampling Bituminous Materials	C	W
UDOT MOI 8-984	Sampling Methods		
<b>REDUCTION</b>			
T 248	Reducing Samples of Aggregate to Testing Size	C	W, P
R 47	Reducing Samples of Hot Mix Asphalt to Testing Size	C	W, P
UDOT MOI 8-985	Sample Reduction Methods		

\*The Examinee may either be asked to physically sample materials or may only be asked to explain the sampling process during this portion of the performance examination.

## EXAMINATION ADMINISTRATION

The following criteria are common to the examination for each module:

### Written Examination

- Closed Book
- Five (5) questions minimum per test method including multiple choice, true or false, and calculations. Exams will be either Metric or English depending on agency standards.
- Written exam must be completed within the time limit designated:

<b>WAQTC Certification</b>	<b>Time Limit</b>
Aggregate (AgTT)	60 minutes
Asphalt II (AsTT II)	90 minutes
Concrete (CTT)	60 minutes
Density (DTT)	60 minutes
Embankment and Base (EbTT)	60 minutes

<b>UDOT TTQP Certification</b>	<b>Time Limit</b>
Aggregate Plus (AgTT Plus)	60 minutes
Concrete Strength (CsTT)	60 minutes
Laboratory (LbTT)	60 minutes
Sampling, Reduction & Density (SRDTT)	60 minutes
Sampling & Reduction (SRTT)	60 minutes
SuperPave (SMD)	90 minutes

### Performance Examination

- Each participant will demonstrate proficiency in the designated test methods.
- Open procedure, but the Examinee **will not** have access to the performance exam checklist.
- Each procedure must be performed within the time limit set by the Agency for that test method.
- The Examinee may be asked to explain various steps to the procedure to reduce the full test time. All test method time limits set by the Agency will take into account the reduction of time due to accelerated steps.
- Each test method will have a performance exam checklist with a “P” or “F” checked by the Examiner.

## Passing Score - Written/Performance

### Written:

- Initial exam (first attempt): An overall score of 70% with a minimum of 60% on any one test method.
- Re-exam (second attempt): An initial exam overall score below 70% will require a re-exam on all test methods. An initial exam score above 70% overall, but below 60% on one or more test methods, will require a re-exam on only those test methods. In the case of one test method comprising the re-exam, the examinee must receive a score of 60%. In the case of more than one test method comprising the re-exam, the examinee must receive a minimum of 60% on any one test method.

### Performance:

- All performance checklists must have 100% of the blanks checked “P” and each test method must be performed within the designated time limit.

## Re-examination Policy - Written/Performance

- Anyone failing the written examination on the first attempt is required to retake the written examination at the scheduling convenience of the Agency, and pass, if Qualification by the TTQP is still desired.
- Anyone failing a test method on the performance exam may repeat that trial during the day of the performance exam.
- Repeat trials will be allowed, if not more than 50% of the total test methods in that performance exam were failed.
- Failure of any one of the prescribed test methods after two trials will constitute failure of the whole performance exam.
- Anyone failing the performance examination on the first attempt is required to retake the performance examination at the scheduling convenience of the Agency, and pass, if Qualification by the TTQP is still desired.
- For individuals failing either examination the second time, retesting will be scheduled no sooner than 30 days from original test date.
- It is recommended that individuals attend the training course for that Qualification, if Qualification is still desired.

**Additional examination guidance can be found in the Program Management section of the Administrative Manual or the RP&IH Handbook.**

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**WAQTC / UDOT TTQP TRANSPORTATION TECHNICIAN QUALIFICATION  
PROGRAM  
ON-LINE REGISTRATION FEE SCHEDULE**

<u>Desired Qualification</u>		<u>Cost</u>		<u>Cost</u>
<input type="checkbox"/> Reciprocity ACI / WAQTC	Per Cert	<input type="checkbox"/> \$25	Amount	___ \$___
<input type="checkbox"/> Aggregate Testing Technician Plus (AgTT Plus)	Course & Exam	<input type="checkbox"/> \$300	Exam Only	<input type="checkbox"/> \$150
<input type="checkbox"/> Asphalt Testing Technician II (AsTT II)	Course & Exam	<input type="checkbox"/> \$300	Exam Only	<input type="checkbox"/> \$150
<input type="checkbox"/> Concrete Testing Technician (CTT)	Course & Exam	<input type="checkbox"/> \$300	Exam Only	<input type="checkbox"/> \$150
<input type="checkbox"/> Embankment & Base Testing Technician (EbTT)	Course & Exam	<input type="checkbox"/> \$300	Exam Only	<input type="checkbox"/> \$150
<input type="checkbox"/> Laboratory Testing Technician (LbTT)	Course & Exam	<input type="checkbox"/> \$300	Exam Only	<input type="checkbox"/> \$150
<input type="checkbox"/> Sampling and Reduction Testing Technician (SRTT)	Course & Exam	<input type="checkbox"/> \$150	Exam Only	<input type="checkbox"/> \$100
<input type="checkbox"/> Sampling, Reduction & Density Testing Technician (SRDTT)	Course & Exam	<input type="checkbox"/> \$300	Exam Only	<input type="checkbox"/> \$150
<input type="checkbox"/> Density Testing Technician (DTT)	Course & Exam	<input type="checkbox"/> \$300	Exam Only	<input type="checkbox"/> \$150
<input type="checkbox"/> Superpave Mix Design and Analysis (SMD)	Course & Exam	<input type="checkbox"/> \$300	Exam Only	<input type="checkbox"/> \$150
<input type="checkbox"/> Concrete Strength Testing Technician (CsTT)	Course & Exam	<input type="checkbox"/> \$300	Exam Only	<input type="checkbox"/> \$150
<input type="checkbox"/> Profilograph (PO)	Course & Exam	<input type="checkbox"/> \$150	Exam Only	<input type="checkbox"/> \$150

Technicians seeking Qualification in one of the designated specialties should consult the TTQP Registration, Policies & Information Handbook (RP&IH) for Qualification criteria, prerequisites, other policies and requirements, and general information.

**UDOT TTQP Cadre**

**Tyson Vorwaller  
Glenn Tarrant  
Gilbert Arredondo**

**UDOT WAQTC / TTQP email:  
udotttqp@utah.gov**

## TRANSPORTATION TECHNICIAN QUALIFICATION PROGRAM RIGHTS AND RESPONSIBILITIES AGREEMENT

This document affirms that \_\_\_\_\_,  
hereinafter the

(Technician's Name)

Technician desires to be Qualified by the Transportation Technician Qualification Program (TTQP) in

\_\_\_\_\_  
(Qualification desired)

**Qualification** carries inherent rights and responsibilities. These rights include being exclusively sanctioned along with others so Qualified by TTQP to perform sampling, testing, and reporting of test results for quality control and quality assurance programs. These responsibilities include performing and reporting tests with the accuracy and precision expected of the Technician in accordance with the required test procedures. By signing this document the Technician agrees to abide by all of the terms of the TTQP included in the Registration, Policies, & Information Handbook and as set forth by the contracting Agency.

Findings of **Negligence** or **Abuse** of these rights and responsibilities will be penalized upon recommendation by the Agency Qualification Committee (AQC) and any appeal to the AQC Chair. Penalties, as prescribed herein, may be assessed for Technician's Negligence or Abuse.

**Negligence** is defined as unintentional deviations from approved procedures, which may or may not cause erroneous results or TTQP Program. The first finding of negligence will result in a letter of reprimand being sent to both the employee and the employer; the second will result in a thirty (30) day suspension of Qualification, the third in a one hundred eighty (180) day suspension of Qualification, and the fourth in permanent suspension of Qualification.

**Abuse** is defined as intentional deviations from approved procedures or TTQP Program. The first finding of abuse will result in a one (1) year suspension to permanent revocation of an individual's Qualification. Any subsequent finding of abuse will result in permanent revocation of Qualification. Revocation or suspension of one Qualification will be considered a revocation or suspension of all Qualifications held by the Technician. Permanent revocation of Qualification will result in that person being ineligible for any TTQP Qualification. The penalties are guidelines and the AQC may impose harsher penalties if warranted for findings of abuse or negligence.

The Technician should also be aware that both State and Federal laws may govern construction projects, including Title 18, United States Code, Section 1020, that in brief states that anyone making falsifications on Federal-aid projects, "**Shall be fined not more than \$10,000 or imprisoned not more than five years, or both.**"

**To maintain UDOT qualification, the Technician shall complete 2 Independent Assurance tests per year for each certification.** See UDOT Materials Manual, Part 8, Section 1012, Independent Assurance, for more information.

I, \_\_\_\_\_, have read, understand, and agree to abide by the Rights,  
(print name)

Responsibilities and Penalties associated with receipt of this **Qualification**.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**UDOT TTQP PROGRAM MANAGEMENT**

## **QUALIFICATION REGISTRATION**

To be eligible for Qualification each technician must complete an On-Line Registration.

Using the hyper-link:

[WAQTC / UDOT TTQP REGISTRATION](https://app.udot.utah.gov/prod/mat/f?p=209:1000:0::NO:::)

Or copy and paste in an internet browser:

<https://app.udot.utah.gov/prod/mat/f?p=209:1000:0::NO:::>

All applicable fee(s) shall be paid on-line up to the deadline of open course registration. Applicable documentation of pre-requisites, or other Agency required information is due at the beginning of Day 1.

## **OUT-OF-STATE APPLICANTS**

The requirements for persons from non-WAQTC member States or Agencies wishing to obtain

Qualifications under the TTQP will be the same as for those from member States or Agencies. Those holding valid Qualifications from other programs and showing proper documentation, may be extended Qualification by the TTQP if the Qualification is judged to offer equal credentials as the TTQP and is approved by the Executive Committee.

## **FEES FOR QUALIFICATION**

UDOT will assess applicant fees as deemed necessary. The applicant should verify the fee(s) prior to registration. For fee schedule, refer to:

*WAQTC / UDOT TTQP TRANSPORTATION TECHNICIAN QUALIFICATION PROGRAM ON-LINE REGISTRATION FEE SCHEDULE.* (reference page 30)

## **RIGHTS AND RESPONSIBILITIES AGREEMENT**

All Qualifications will be contingent upon the technician signing a Rights and Responsibilities Agreement. This agreement will inform the technicians of the rights and responsibilities along with the consequences of the violation of these responsibilities. The technician will submit a signed agreement along with their first attempt of the written exam. A copy of the agreement is included in this manual.

## **CANCELLATION POLICY**

UDOT TTQP / WAQTC cancellation policy is as follows:

- Minimum of 72 hour notice of course cancellation is required via email notification.
- UDOT Materials Division reserves the right to levy a \$100 charge per person to cover any subsequent administration expenses for improper course cancellation.
- If the minimum course size is not reached, the course or examination may be canceled.
- Courses or examinations may be canceled for other reasons not specifically stated herein. Every effort will be made to notify the applicants well in advance if a cancellation is necessary.
- If a course or examination is canceled, the applicant will be issued a full refund of any fee(s) paid.
- It is the applicant's responsibility to re-register for any cancelled courses.

## **REFUND POLICY**

**To qualify for a full refund, 72 hour minimum cancellation is required.**

Refunds will be considered for cancellations made at least 72 hours before the examination. Refunds for emergencies will also be considered for instances where a cancellation could not be made 72 hours in advance as required.

## **EXAMINATION**

As part of the Qualification process, each technician will be required to pass both written and performance examinations which are designed to demonstrate both a knowledge and understanding of the test procedures. Written exam Administrators and performance exam Examiners should thoroughly explain to the participants what the exams will entail and the examination rules prior to the beginning of the exams. It is envisioned that multiple examination stations will be required during the performance examination; therefore, there will be multiple Examiners required for the performance portion of the examination. Failure of either the written or performance portions of the Qualification will require re-examination and a passing grade in the exam(s) failed, if Qualification is still desired, subject to the criteria described herein.

## **WRITTEN EXAMINATION**

The written examination will consist of multiple choice, some of which will require calculations, or true/false questions. All questions require detailed knowledge of the test method procedures and basic reading comprehension. The examination is closed book which requires that no technical materials or notes are allowed in the room during the examination. Calculations may be required for some questions; therefore, a battery-powered pocket calculator may be brought to the examination. Calculators may not be shared. The individual must bring No. 2 pencils and erasers and clean scratch paper if desired. All written exams

will be administered within a specified time frame, which will be consistent within each Agency. At the end of the designated period all exams and used scratch paper will be collected by the exam Administrator. Scratch paper will be destroyed. Exam scores are to remain confidential. The written exam material is not to be discussed with, or provided to, any unauthorized individual. The exam should be scored and the results given to the designated Agency person no later than the end of the first business day after the exam is given.

A participant will successfully pass the written examination by meeting the following criteria:

- A minimum score of 70% on the entire written exam for that Qualification.
- A minimum score of 60% on each segment (test method) of the written examination.

## **PERFORMANCE EXAMINATION**

The performance examination may be performed with the procedure open for reference; however, referral to the exam checklist, or any notes or other material reflecting the content of the checklist, by the examinee will not be permitted during the exam. Each procedure will be completed within the time limit designated by the Agency for that method. The participant is required to successfully perform all steps of the designated test procedures for the particular Qualification area, with the exception that an examinee may be asked to explain various steps to a procedure in order to reduce the total test time. All test method time limits set by the Agency will take into account the reduction of time due to accelerated steps. An individual may be required to verbally describe the procedures for sampling of a material, such as Sampling Freshly Mixed Concrete, if performance of the method is not practical or feasible.

Judgment will be based on the ability to correctly perform all required procedures for each of the methods based on criteria shown on the performance examination checklists (which are included in each Qualification subject area Instructor Guide and Participant Workbook at the end of each section). Omission of one or more of the prescribed procedures will constitute failure of that test method. The inability to complete the test method within the designated time limit will constitute failure of the method. The examinee may perform one repeat trial of a failed method, at the Examiner's convenience, on the day of the exam. The examinee may request that a different Examiner administer a repeat trial of a failed test method. Failure of any one of the prescribed test methods after two trials will constitute failure of the performance examination portion of the Qualification process. Scoring of the exam will be on a pass/fail basis.

The performance examination will occur in the direct presence of the Examiner. All steps of the method must be performed, except that certain steps may be accelerated when properly explained to the Examiner.

The Examiner may not respond to questions or assist in the performance of the method. Immediately after completion of the method, the Examiner will tell the individual if he/she

has passed or failed that trial. If a failure has occurred, the Examiner will denote which part of the method was performed or described incorrectly. The Examiner will not stop a trial when an error has occurred, nor will he/she in any way signify approval or disapproval. Any disputes will be referred immediately to and reconciled by the course or exam Administrator. The results of the performance examination, as well as all performance examination checklists, will be provided to the designated Agency person no later than the end of the first business day after the exam is given.

## **RE-EXAMINATION**

Re-examination for both the written and performance exams will be conducted according to the same criteria as the original examinations. The one exception is on the written examination. See pages 24 and 25 for detailed information. The applicant may either make individual arrangements with the Agency for re-examination or apply to take a scheduled exam, depending upon Agency preference or policy. For individuals failing either examination the second time, retesting will be scheduled no sooner than 30 days from original test date. It is recommended that individuals attend the training course for that Qualification, if Qualification is still desired.

## **EXAMINATION MATERIALS SECURITY**

This policy applies to:

- All written examination materials, including blank exams, completed exams, and answer keys; and
- The Examiner's scoring checklist for performance exams.

Personnel involved with Qualification examination should attend a TTQP orientation session conducted by a member of the WAQTC, QAC, or UDOT TTQP Qualification Committee. It is imperative that examination materials are kept secure and confidential at all times.

Violation of examination security can compromise the exam, and destroy its integrity and validity as a Qualification instrument. The definition of secure in this document implies that materials will be kept under lock and key, except when being utilized in an official manner, and only those having authority as described elsewhere in this document have access. At such times as these documents are removed from a locked location, they will remain in the immediate possession and view of the authorized person only, and will not be made available for possession or viewing by others.

Exam security must be maintained throughout all aspects of exam materials, including:

- development and validation of new exams or questions;
- reproduction of exam materials;
- storage of blank exam materials and answer keys;
- administering and scoring exams;
- storage of completed exams; and
- destruction of old exam materials

Access to exam materials and answer keys is limited to the following personnel, when and as needed in carrying out their responsibilities in the Qualification program:

- program administrative personnel in the inventory, storage, and reproduction of the exam materials;
- examination Administrators, Scorers, or performance exam Examiners in the administration and scoring of exams;
- program administrative personnel in the recording of exam results, storing completed exams, and destroying old exams; and
- selected individuals or subject-matter experts who have been assigned and authorized by the WAQTC to review, assess, update, revise, and validate exam materials.

The consequences for those individuals found violating the security of Qualification examination materials will be:

- written reprimand if the violation is by negligence and the requirement to attend a TTQP orientation
- banning from any future association with the TTQP, if the violation is willful or intentional

Any disciplinary action or dismissal associated with serious violations will be determined according to the policies and procedures of the employer of the offending party.

## **RETENTION OF WRITTEN EXAMINATION**

After each Qualification examination process, all used exam materials, both passing and failing, will be retained, in conformance to guidelines contained in the section entitled Examination Materials Security, by the Agency providing the Qualification examination, for a period of one (1) year and will then be destroyed by shredding or other effective method. During this one year period the WAQTC may require that these exams be forwarded to the WAQTC for objective evaluation.

## **PARTICIPANT NOTIFICATION**

Verbal notification of each participant's successful or unsuccessful results of the Qualification Requirements is delivered upon final day of exams. All successful qualification exams will be granted via email from the Materials Database within 3-5 business days.

## **LENGTH OF TECHNICIAN QUALIFICATION**

The length of time in which a technician may remain qualified in any qualification area will be set by the qualifying agency (UDOT). This time period shall be a five (5) year re-qualification cycle from the date of the examinations.

To maintain UDOT qualification, the Technician shall complete 2 Independent Assurance tests per year for each certification. See UDOT Materials Manual, Part 8, Section 1012, Independent Assurance, for more information.

Individuals that are qualified by an agency using a five year re-qualification cycle may be required to demonstrate proficiency when requesting reciprocity with an agency using a three year re-qualification cycle.

## **QUALIFIED TECHNICIAN REGISTRY**

Within 5 working days after completion of any Qualification proceeding, the Agency conducting the

Qualification exams should log each participant that has successfully completed the Qualification requirements on the **Qualified Technician Registry** for that Agency which is linked to the WAQTC

Web site. The required information to be logged in the appropriate field is:

- The successful participant's full name
- A unique Qualification number  
**Note:** The number assigned with the first Qualification will remain with that employee no matter if additional Qualifications may be attained through other WAQTC Agencies. Should a technician obtain a Qualification in a state other than the one designated by the assigned Qualification number, the Agency issuing the additional Qualification will notify the Agency where the Qualification number originated so that the Qualification may be properly registered.
- The area in which the Qualification is received as designated on the WAQTC Transportation Technician Qualification Program (TTQP) Registration.
- The month and year of the Qualification expiration - the last day of the month in which the initial exam portion of the Qualification was successfully completed, in the fifth (5) year after that initial exam.

## **INSTRUCTOR QUALIFICATIONS**

Instructors for the WAQTC / UDOT TTQP should meet the following guidelines:

- Extensive experience in the test methods contained in the Qualification
- Experience and demonstrated ability in training and communicating with participants
- Exhibition of a positive attitude while interacting with others
- Willingness to uphold the high standards set by the TTQP and to follow the policy guidelines

Instructors should complete a TTQP orientation session presented by a representative of UDOT TTQP who has also completed such an orientation on the policies and procedures of the TTQP. Future instructors should also have successfully completed the UDOT's apprenticeship / on-the-job training in which they will be instructing. The Agency should



maintain a list of those individuals that meet the requirements to act as instructors in each Qualification area.

### **COURSE OR EXAM ADMINISTRATOR, SCORER, AND EXAMINER QUALIFICATIONS**

Only those individuals that have attended a TTQP policies and procedures orientation session, conducted by a representative of the UDOT TTQP, should administer or score written exams. It is not required that the same party that administers the written exam also scores it. Performance exam Examiners should possess both considerable experience in performing both general materials testing and the methods that they will be proctoring. In addition, they should demonstrate the same willingness to uphold the standards of the TTQP. Furthermore, Examiners should not be in the chain of command of those being Qualified, nor should they be related. Future Examiners should also have successfully completed the Qualification that they will be proctoring.

**Each Agency should also hold instructional sessions to ensure that each performance exam Examiner proctors the exams in exactly the same manner.**

The Agency should maintain a registry of all Administrators, Scorers, and Examiners that have met the requirements to perform such functions.

### **ORIENTATION**

All persons participating in any capacity in the administration of the TTQP should be required to attend a TTQP orientation session presented by a representative of the UDOT TTQP. The session should cover the appropriate sections of the Administrative Manual, the intent and scope of the TTQP, the responsibilities of the party(s) attending the orientation, and how they fit into the scope of the program. The content and thoroughness of the orientation may be tailored to the responsibilities of the person within the program. Each Agency should maintain a registry of all persons that have completed this orientation.

### **COURSE EVALUATIONS**

Course evaluations will be obtained for each Qualification course administered by UDOT TTQP or through Survey Monkey. Instructors should stress the importance of thoughtful completion of these forms. These evaluations will revise and improve the program.

### **REGISTRATION, POLICIES AND INFORMATION HANDBOOK**

Guidance for technician registration in a course or exam, TTQP policies, and other information intended for the use of the technician is contained in the TTQP Registration, Policies & Information Handbook (RP&IH), which is a TTQP, standardized document. This Handbook should be kept up to date by each Agency. Agency specific policies, information, or examination or training requirements, etc., as defined below and elsewhere in this manual,

may be entered in this Handbook, to supplement the standard TTQP information, for reference by the technician or laboratory.

## **UPDATES TO THE UDOT TTQP REGISTRATION, POLICIES & INFORMATION HANDBOOK**

As changes to the program occur or other RP&IH updates are required, the new information will be posted on the WAQTC Web site. Others may obtain this information by calling the TTQP representative in their state.

Even though every effort will be made to make current information available to everyone, it is the responsibility of the Qualification holder to keep current on new issues and to provide the appropriate representative with address and employer changes if required.

### **AGENCY PERSONALIZATION / ALTERATION OF MATERIALS**

Member Agencies are not authorized to make any changes to any materials, such as course materials or Administrative procedures that fall under the jurisdiction of the TTQP with the following exceptions: Agencies may include in the RP&IH their own Agency specific information, fee structure, cancellation and refund policies, course allocations, individualized registration forms, or other such information as defined in this manual.

The written examination questions may be organized or compiled according to Agency preference as long as the content and procedure adheres to the guidance provided in this manual and the exam reflects that it is a product of the WAQTC TTQP. Agencies may provide supplemental administrative guidance for Agency specific issues in the RP&IH as long as it is not in conflict with any guidance contained herein. The addition of Agency specific supplemental information, such as Agency specific test methods, contract administration guidance, specification information, or quality assurance program information to Qualification courses is not considered a change to the program.

### **PROGRAM REVISION / UPDATES**

Revisions and updates to the TTQP will be recommended to the WAQTC Executive Committee by the QAC based upon participant and Agency comments and materials testing procedural changes. The QAC will meet each year by May 30, or at other such time as directed by the Executive Committee, to consider such changes. Suggestions and comments, in addition to those received from course evaluation forms, should be provided in writing to the AQC, which will provide them to the QAC for consideration. Those revisions or updates adopted by the Executive Committee will then be conveyed to the designated party in each Agency for uniform incorporation into the Agency's master copy of the appropriate course material, or other document, by October 1 of the year in which adopted.

### **RECORDING OF DOCUMENT**

Each Agency should document the date of the latest revision of program materials, including the Registration, Policies, and Information Handbook or course materials, etc., by entering the following information, or information of a similar format, at the bottom of the inside front cover of the applicable document when **authorized alterations** to that document have been completed.

For Agency specific revisions: “Revised by (enter Agency abbreviation) - (enter date)”

Those changes that may be affected by WAQTC only, will be signified by:

For WAQTC approved revisions: ‘Revised by WAQTC - (enter date)’

**WAQTC WEB SITE LINK**      [www.waqtc.org](http://www.waqtc.org)

The WAQTC Web site is intended to provide useful information both to the member Agencies, other Agencies, and the general public about the TTQP and other programs of the WAQTC.

## **QUALIFICATION RENEWAL POLICY**

Qualification renewal is required to be completed on the same day of the month in which the initial exam portion of the Qualification was successfully completed. **Utah Department of Transportation has chosen the five-year option. All qualifications, beginning January 3, 2006 will reflect the five-year cycle. All qualifications obtained prior to January 3, 2006 will retain the original re-qualification date.**

- The technician is responsible for making arrangements for obtaining his/her applicable Qualification renewal and must do so before the expiration date of the Qualification.
- The procedures for Qualification renewal are the same as for the initial Qualification. Although renewal is the responsibility of the technician, an Agency may adopt other policies, such as notifying the participant prior to the expiration date, if desired.
- Interim or Qualification refresher courses may be offered; however, it is also the responsibility of the technician to stay abreast of changes to procedures and test methods.

## **UDOT REVOCATION, SUSPENSION OR DENIAL OF QUALIFICATION**

The Utah Department of Transportation (UDOT) Transportation Technician Qualification Program (TTQP) is intended to assure qualified personnel performing all materials testing on UDOT construction projects. Overall guidelines for qualification and disqualification have been adopted from the WAQTC Administrative manual.

In case of conflict of interest, or the appearance of such, the UDOT Qualification Committee (UQC) may substitute members. Replacements are approved by the State Engineer for Materials or designee.

The UDOT Qualification Committee (UQC) of the TTQP may revoke Qualifications it has awarded at any time for just cause. Revocation or suspension in one Qualification area will be considered revocation or suspension in all Qualification areas and will be in effect in all member Agencies of the WAQTC.

The process for revocation, suspension or denial starts with a written complaint to the UQC chairperson. This document must, at minimum contain: technicians involved, date of the incident, accounting of the incident, name and contact information of individual submitting the request. The UQC reserves the right to start an investigation based on other information, if necessary.

Upon receipt of the complaint the UQC chairman will contact the individual(s) submitting the information. The chairperson will determine if the individual would be willing to address the committee and answer any pertinent questions. Documentation submitted for UQC review is otherwise confidential. The UQC will review the documentation/information within 30 days to determine whether further investigation is required. If so, the UQC will assign an investigator to perform the investigation. The UQC will review the information obtained through the investigation and may conduct additional interviews. The technician involved will be notified of the UQC's findings. The technician shall have 15 working days to respond, in writing. At any point in the process the UQC may determine, due to insufficient evidence, to discontinue the process.

The UQC will then determine whether the violation falls under the definition of *Negligence* or *Abuse*.

***Negligence*** is defined as unintentional deviations from approved procedures or the unintentional failure to follow the requirements of the TTQP Program.

***Abuse*** is defined as intentional deviations from approved procedures or the intentional failure to follow the requirements of the TTQP Program.

The appropriate process will be followed upon determination of the category of the violation.

#### **Process for *Negligence*:**

*Negligence* should be resolved in a positive fashion that promotes learning and increased understanding. The complaint process tracks technicians who have repeated incidents of *negligence*. This process will also allow a means of tracking common problems and issues.

A single incident of *negligence* may be resolved through intervention by the Region Independent Assurance Inspector (IAI). The IAI will supply clarification to the technician on proper sampling and testing techniques per the Quality Assurance Manual. Documentation of each incident shall be sent to the UQC. The UQC will maintain records of each incident. If only one report, of a minor nature, is received in a one-year period, no further action may be taken. However, if it is determined that the *negligence* is significant the requirements under "second incident" will be followed.

If a second incidence of *negligence* is reported within a one-year period, the UQC will require the technician and his/her employer develop a corrective action plan. The UQC will notify all the Region IAI's. This notification is intended to make the IAI's aware of the problems being encountered.

If a third incident of *negligence* is reported within a two-year period, the technician and his/her employer will receive notice of a minimum thirty-day suspension. The technician and his/her employer will be responsible for providing a plan to correct the deficiencies to ensure no further incidents occur.

Another reported and verified incidence of *negligence*, within one year of suspension, shall result in a minimum 180-day suspension of the technician's qualification. The UQC may require the technician to attend additional training and re-qualify before reinstatement.

Any further incidents of *negligence* could result in permanent revocation.

The UQC could at any point re-classify repeated instances of *negligence*, as *abuse*. If this occurs, the issue would be dealt with through the process for *abuse*.

### **Process for *Abuse*:**

The UQC will determine the severity of the *abuse*.

The first finding of abuse will result in a one-year suspension to permanent revocation of an individual's qualification. Any subsequent finding of abuse will result in permanent revocation of Qualification.

Revocations or suspensions for *abuse or negligence* in one Qualification area will be considered revocations or suspensions in all Qualifications held by the technician. Such revocations or suspensions will be in effect in all member Agencies of the WAQTC.

Revocations, suspensions, or denials will be sent to the individual in writing along with the individual's right to appeal. A proposed revocation or suspension is effective upon receipt by the technician and will be affirmed, modified, or vacated following any appeal.

The UQC should also be aware that both State and Federal laws may govern construction projects, including Title 18, United States Code, Section 1020, that in brief states that anyone making falsifications on Federal-aid projects: "Shall be fined not more than \$10,000 or imprisoned not more than five years, or both."

### **NOTIFICATION OF QUALIFICATION REVOCATION OR SUSPENSION**

Each Agency may notify the other members of the WAQTC, or other participants in the TTQP, of anyone having a Qualification revoked or suspended. The responsible Agency will remove the Qualification expiration date, for all applicable Qualifications, from the Qualified Technician Registry immediately upon the revocation or suspension of the Qualification(s) as verification to other Agencies of such action.